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Sep. 5. 1995 4:53PM PACBELL LEGAL DEPT.

**CCLTC FIRST SET OF INFORMATION REQUESTS  
IN PHASE I OF L95-05-047**

RECEIVED  
OCT 23 1995  
FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE ATTORNEY GENERAL

**REQUEST I:**

Does Pacific Bell and/or Dr. Christensen have in its/his possession additional updated data, information or revisions to any of the data utilized in the original CC Docket 94-1 USTA TFP study or in the "updated" January 20, 1995 USTA TFP study? If the response to this request is anything other than an unqualified "no," please provide all such data, information or revisions.

**RESPONSE I:**

On April 12, 1995, after the completion of the "updated" January 20, 1995 USTA TFP study, Pacific Bell obtained updated and revised Telephone Plant Indexes ("TPIs"). See the attachment to this response for comparison of the Pacific Bell TPI provided for the January 20, 1995 USTA TFP study and the updated and revised TPI obtained by Pacific Bell after that study.

Dr. Christensen does not have in his possession additional updated data, information or revisions to any of the data utilized in the original CC Docket 94-1 USTA TFP study or in the "updated" January 20, 1995 USTA TFP study.

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\_\_\_\_\_  
\_\_\_\_\_

ATTACHMENT: RESPONSE 1.

PACIFIC BELL  
TELEPHONE PLANT INDEX COMPARISON  
1994 = 100

INDEXES USED IN JANUARY 20, 1995 TFP STUDY

COMPONENT	1994	1995	1996	1997	1998	1999	2000	2001	2002
GENERAL SUPPORT	100.0	99.7	100.1	100.8	102.0	103.6	101.9	94.9	99.4
CENTRAL OFFICE	100.0	99.0	99.9	91.4	74.8	92.6	93.2	94.6	92.8
OPERATOR SYSTEMS	100.0	99.5	99.4	94.4	96.5	104.9	107.5	108.1	100.9
CENTRAL OFFICE / OPER SYS	100.0	99.0	99.9	91.4	75.3	92.2	99.6	95.1	99.4
TRANSMISSION	100.0	99.1	100.0	107.4	106.4	107.9	112.9	114.8	110.7
INFORMATION ORIGIN/TERMINATION	100.0	100.1	113.6	114.9	113.0	116.1	117.5	117.8	119.3
CABLE AND WIRE	100.0	101.2	100.6	99.3	101.8	118.0	119.6	121.1	123.2

UPDATED AND REVISED INDEXES - APRIL 12, 1995

COMPONENT	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
GENERAL SUPPORT	100.0	99.7	100.1	100.8	102.0	103.6	101.9	94.9	99.4	94.9
CENTRAL OFFICE	100.0	99.0	99.9	91.4	74.8	92.6	93.2	94.6	91.4*	96.1
OPERATOR SYSTEMS	100.0	99.5	99.4	94.4	96.5	104.0	107.5	108.1	99.8*	99.7
CENTRAL OFFICE / OPER SYS	100.0	99.0	99.9	91.4	75.3	93.2	99.6	94.9*	91.9*	95.0
TRANSMISSION	100.0	99.1	100.0	107.4	106.4	107.9	112.9	114.8	110.7	114.2
INFORMATION ORIGIN/TERMINATION	100.0	100.1	113.6	114.9	113.0	116.1	117.5	117.8	118.2*	121.3
CABLE AND WIRE	100.0	101.2	100.6	99.3	101.8	116.0	118.6	121.1	123.2	135.3

\* REVISION

**CCLTC FIRST SET OF INFORMATION REQUESTS  
IN PHASE I OF L95-05-047**

**REQUEST II: (Part A)**

**Does Pacific Bell intend to rely upon the January 20, 1995 "updated" USTA TFP study in the testimony to be filed on September 8, 1995?**

**RESPONSE (Part A)**

**Yes.**

**REQUEST II: (Part B)**

**Does Pacific Bell intend to rely upon any other studies pertaining to productivity, input prices, output prices, or other factors affecting Pacific's ongoing cost levels in the testimony to be filed on September 8, 1995? Please identify with specificity all such materials upon which Pacific and/or any of the witnesses it expects to sponsor intend to rely.**

**RESPONSE II: (Part B)**

**Yes. The attached lists identify those studies that Pacific Bell anticipates will likely be relied upon and/or referenced by its witnesses in this proceeding.**

Sep. 5. 1995 4:54PM PACBELL LEGAL DEPT.  
San Francisco, California 94102  
(415) 962-3322

No. 5510 P. 6/18

August 9, 1995

Honorable Jacqueline Reed  
Administrative Law Judge  
California Public Utilities Commission  
505 Van Ness Avenue, Room 5011  
San Francisco, CA 94102

Re: LEC-82-067 (1995 NRE Hearing)

Dear ALJ Reed:

At today's Prehearing Conference, I was asked whether Pacific Bell would agree to provide all documents that it had previously provided to DRA in the course of discovery in this proceeding to other parties requesting such documents. This letter confirms that we will provide the documents previously provided to DRA to parties that request them.

I also said that our showing in this proceeding will include the results of a study of total factor productivity for the LEC telecommunications industry performed by Dr. Laurits R. Christensen (Productivity of the Local Telephone Operating Companies (May 1994, updated in 1995)). While we will rely primarily on Dr. Christensen's study, the results of other productivity studies will likely be cited in our testimony. I attach a list of those studies to this letter. While we do not have copies of all of those studies, I understand that they are publicly available. We are attempting to obtain copies of those studies not currently in our possession. To facilitate discovery, upon request (and subject to any copyright concerns) we will provide a copy of the studies we have.

Sincerely,

*Michael D. Lewis*

Attachment

### Productivity Studies

American Productivity and Quality Center, Multiple Input Productivity Studies, Cited in FCC Decides 87-313, Second Notice of Proposed Rule Making, May 12, 1988, page 208.

Bell System Productivity Study: 1967-1979, September 1980.

L.R. Christensen, Testimony filed in United States v. AT&T, Civ. Action No. 1698 (D.D.C. Filed Nov. 28, 1974).

Testimony of L.R. Christensen, "Total Factor Productivity Growth in the U.S. Telecommunications Industry and the U.S. Economy: 1951-1987," filed in North Dakota Public Service Commission Case No. PU-2320-90-149, October 1, 1990.

DRI / McGraw-Hill, Pennsylvania Telecommunications Infrastructure Study, Volume V, March 1993.

R.W. Crandall and J. Gale, "Productivity Growth in the U.S. Telecommunications Sector, The Impact of the AT&T Divestiture", The Brookings Institution, February 1, 1991.

D.W. Jorgenson, F.M. Gollop, and B.M. Fraumeni, Productivity and U.S. Economic Growth, Cambridge: Harvard University Press, 1987.

M.I. Noddi and M. Schramm, "The Structure of Production, Technological Change, and the Rate of Growth of Total Factor Productivity in the U.S. Bell System," in Productivity Measurement in Regulated Industries, (T. Cowing and R. Stevenson, eds.), New York: Academic Press, 1981.

T.C. Sparrow, "The Long-Term View of the Appropriate Productivity Factor for Interstate Exchange Access," FCC CC Decides 87-313, Second Report and Order, September 19, 1988, Appendix D.

W. Taylor and T. Tardiff, Spillover Performance Under The New Regulatory Framework: An Economic Evaluation for the First Three Years, April 8, 1993, Appendix A. (Exhibit 1 in A.92-05-004).

DRA, Report on The 1992 Review of The New Regulatory Framework, Section 2. (Exhibit 30 in A.92-05-004).

D. J. Ruddy, Direct Testimony, April 8, 1993. (Exhibit 61 in A.92-05-004).

U.S. Bureau of Labor Statistics, Multiple Input Productivity: Private Business Sector

*Additional Studies That Will Likely Be Referenced in Pacific Bell's Testimony*

- Spartan and J.M. Lusch, "Total Telephone Productivity in the Pre and Post Divestiture Period," FCC CC Docket 87-313, Supplemental Notice of Proposed Submissions, 1978, Appendix D.
- U.S. Department, Bureau of Labor Statistics, Bureau of Labor Statistics, *Monthly Labor Review*, 1994AL, Bulletin 217R, September 1993; U.S. Department of Labor, Bureau of Labor Statistics, "Methodology Productivity Measures, 1991 and 1992," USDL 94-527, July 11, 1994; and U.S. Department of Labor, Bureau of Labor Statistics, *Labor Compensation and U.S. Productivity Growth*, 1994A0, Bulletin 2426, December 1994.
- "The UCLA Business Forecast for the Nation and California," *Conference Edition*, June 1993.
- L.R. Christensen, D.C. Christensen, and P.B. Schmidt, "Total Factor Productivity in the Bell System," *Christensen Associates*, Sept. 1991.
- Bell Communications Research, *Measurement and Estimation of the Marginal Operating Cost of Telephone Access*, May 1997.
- L.R. Christensen and D.W. Jorgenson, "U.S. Bell Product and Real Factor Input, 1969-1997," *Bulletin of Economic and World*, Series 16, March 1978, Updated September 1994.
- "The Importance of Examination of Scale, Capacity Utilization, and Density in Explaining Industry Differences in Productivity Growth," *The Logistics and Transportation Review*, March 1998, pp. 3-32.
- L.R. Christensen, D. Christensen, and P.B. Schmidt, "Economic Estimation of Scale Economies in Telecommunications," in L. Christensen, A. de Prouxville, and B. Doherty, eds., *Economic Analysis of Telecommunications* (Amsterdam: North-Holland Press, 1993).
- "Economic Estimation of the Marginal Operating Cost of Access," *Special Report SM-FAD-990322*, May 1997.
- "Universal Telephones in Local Telephone," *Bell Journal of Economics*, Summer 1992, pp. 171-183.
- "Costly Ombus to Breaking Up LECs and the Baby Bells," *Bulletin of Economics and Statistics*, May 1993, pp. 357-361.
- "The Effects of Divestiture, Privatization, and Competition on Productivity in U.S. and U.K. Telecommunications," *The Bulletin of Industrial Organization*, May 1993, pp. 67-82.
- "Telephones Cost Functions Estimates for the Bell System," in D.S. Brown, ed. *Breaking Up Bell*, North-Holland, New York, 1991.
- "A Test for Substitutability of the Cost Functions with an Application to the Bell System," *American Economics Review*, September 1994, pp. 615-623.
- "Natural Monopoly and the Bell System: Response to Christen, Cooper, and Shyrock," *Management Science*, January 1998, pp. 27-38.
- "A Cost Programming/Constrained Regression Review of the Bell System Breakup," *Management Science*, January 1998, pp. 1-26.
- "Topic Quadratic Cost Functions with an Application to the Bell System," *Bulletin of Economics and Statistics*, May 1990, pp. 202-210.
- Modeling Cost Structure: the Bell System Revisited," *Applied Economics*, September 1990, pp. 1661-1674.

Leonard Weisman, "U.S. Broadcasting Competition," R.W. Crandall and E. Fanning, eds., *Changing the Rules: Technological Change, International Competition, and Regulation in Communications*, (Washington, DC, Brookings, 1992), p. 91.

"The \$20 Billion Impact of Local Competition in Telecommunications," Strategic Policy Research, July 16, 1993.

Brigley Mc Michael, *International Cases of Telephones Access and Local Use*, June 1994, Santa Monica, The RAND Corporation, 1990.

Lewis J. Perl and Jonathan Perl, "The Use of Economic Analysis in Evaluating Mergers and Acquisitions," presented at the Bell and Bell Canada Industry Forum, San Diego, California, April 6, 1993.

Michael J. Weisman and Thomas C. Snyder, "The Impact of Technological Change on the Structure of the Local Exchange and the Pricing of Exchange Access As Issues Arise," unpublished draft.

Alfred E. Kahn, "Review of Regulatory Framework: Telecommunications CRTC 89-79," Evidence submitted to the Canadian Radio-television and Telecommunications Commission on behalf of AOT Limited, April 13, 1990.

Strategic Policy Research, "Telephone Network for the Information Age: Providing the Vision," Prepared for American Bell Atlantic, BellSouth, Lucent Telephones, NYNEX, Pacific Telesis, Southern New England Telephone, and Southwestern Bell, January 11, 1994, pp. 1723.

Alfred E. Kahn, *The Economics of Regulation Principles and Institutions*, Cambridge: The MIT Press 1988, Vol. 1, p. 17.

William J. Baumol and J. Gregory Sidak, *Toward Competition in Local Telephony*, Cambridge: The MIT Press, 1994, pp. 4-5.

Robert W. Crandall, *After the Bell: US Telecommunications in a More Competitive Era*, Washington DC: Brookings Institution, 1993, p. 78.

G.A. Stansbury, E.R. Siegfried, P.A. Dittus, and E.A. Smith, "Industry Structure, Productivity and International Competition: The Case of Telecommunications," *Information Economics and Policy*, Vol. 6, No. 2, July 1994, pp. 121-142.

William E. Taylor and Lester D. Taylor, "Telecommunications Long-Distance Competition in the United States," *American Economic Review*, Vol. 83, 1993, pp. 185-190.

Thomas J. Tilling, William E. Taylor, and Charles J. Zink, "Telecom: Review of Tele-Op Plans: Economic Issues," presented at the Third Annual Telecommunications Policy Research Conference, Baltimore, Maryland, October 2, 1994.

S.G. Weisberg Research, "Telecommunications Services, Statistical Summary Regional Bell Exchange Companies and GTE," William H. Dunning, April, 1993.

Yoshio Waseda, "Convergence of Local and Long Distance: The New Integrated Carrier," December 1994.

A Report to the Governor, "Enhancing California's Competitive Strength: A Strategy for Telecommunications Reform," November 1994, California Public Utilities Commission.

"The UCLA Business Forum for the Nation and California," March 1994, UCLA Business Forecasting Project Conference Edition.

Salla, Philip J., Westwood Schroeder & Co., "The Digital Battlefield - What's in the Future of Telecommunications and Broadcasting? Part One: Telephony - The End of the Game," March 22, 1994.

The Yankee Group, "A CAP Market Update: No Future for the Independents?", July 1993.

Donelson, Lufkin, Janotta, "The Wireless Communications Industry," Summer 1994.

The Yankee Group, "AT&T: Once Again the Most Integrated Telecommunications Provider," June 1995.

National Cable Television Association, "Cable Television and America's Telecommunications Infrastructure," 1993.  
(From the Information Infrastructure Sourcebook, Version 3, Vol. 1, John F. Kennedy School of Government, Harvard University)

Reed, David P., "The Prospects for Competition in the Subscriber Loop: The Fiber-to-the-Neighborhood Approach," presented at the Twenty-first Annual Telecommunications Research Policy Conference, September 1993.

Peter W. Huber, Michael K. Kellogg, and John Thorne, "The Goodwin Network II: 1993 Report on Competition in the Telephone Industry"

Cellular Telecommunications Industry Association, "The Wireless Yearbook," Spring 1994.

Huber, Peter W., "Competition and Open Access in the Telecommunications Markets of California," February 8, 1994.

The Yankee Group, "PCB: The Implementation Phase," February 1995

"The Enduring Myth of the Local Bottleneck in California," July 18, 1994

Quality Strategies, "Pacific Bell Second Quarter - 1993 High Capacity Services Market Share San Francisco and Los Angeles, Released June, 1993," June 21, 1993.

Quality Strategies, "Pacific Bell Usage Task Second Quarter " Second Quarter, 1993.

Quality Strategies, "Pacific Bell Usage Task Residential Second Quarter, 1993"

Quality Strategies, "Pacific Bell BECAP Task Third Quarter, 1993" August 8, 1993.

Pacific Bell, 1993 Residence Product Breakdown.



**CCLTC FIRST SET OF INFORMATION REQUESTS  
IN PHASE I OF L95-05-047**

**REQUEST III:**

Reference to pp. 2-3 of the February 3, 1995 USTA ~~ex parte~~ filing, titled "SUMMARY OF EXPLANATIONS OF LEC DATA ADJUSTMENTS." Please identify the individual(s) at each of the LECs cited therein who furnished the described "data adjustments" and provide all correspondence between and among USTA, Dr. Christensen (including members of his staff) and the individual LECs pertaining to each and all of the "data adjustments" that are enumerated on the referenced pages.

**RESPONSE III:**

Pacific does not know the identity of the individuals at each of the LECs who furnished the data adjustments, nor does it have any correspondence related to the data adjustments. Pacific Bell has been advised that any information or correspondence within the scope of this request that is in the possession of either Dr. Christensen (including members of his staff) or USTA is subject to non-disclosure requirements and, therefore, cannot be provided. We are continuing to investigate who provided the single correction of Pacific's data and if we identify such individual we will immediately notify you. However, as you can determine from the ex parte correction, our data change was minor and would have minimal impact.

Sep. 5 1995 4:57PM PACBELL LEGAL DEPT.

No. 5510 P. 12/18

**CCLTC FIRST SET OF INFORMATION REQUESTS  
IN PHASE I OF L95-03-047**

**REQUEST IV:**

Were any "data adjustments" proposed by LECs not included in the "1993 update" that was provided to the FCC on January 20, 1995? If so, what criteria were used in selecting items for inclusion or exclusion? Who made the selection? Provide documentation relative to all items not included in the "update."

**RESPONSE IV:**

No.

**CCLTC FIRST SET OF INFORMATION REQUESTS  
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**REQUEST V:**

Please identify which of the items on pp. 2-3 of the February 3, 1995 ex parte filing were of the nature of "corrections" to previous errors and which were of the nature of "new information" that was not available at the time the original USTA TFF study was filed. For items identified as "errors," indicate how the "error" was discovered, who discovered it, when it was discovered, who corrected it, and when the correction was provided to USTA and/or to Dr. Christensen.

**RESPONSE V:**

GTE Telephone Plant Indices ("TPI's") were not available for the original study and would be classified as "new information". All other items on pp. 2-3 of the February 3, ex parte filing would be classified as "corrections". Dr. Christensen does not know how the errors were discovered, who discovered them, when they were discovered, or who corrected them. Corrected data were provided to Dr. Christensen in the November-December 1994 time frame.

Pacific Bell has been advised by USTA that to the extent that USTA has such information, USTA is not authorized to release it.

Sep. 5, 1995

4:58PM

PACBELL LEGAL DEPT.

No. 5510

P. 14/18

**CCLTC FIRST SET OF INFORMATION REQUESTS  
IN PHASE I OF L95-05-047**

**REQUEST VI: (Part A)**

Reference to pp. 4-9 of the February 3, 1995 USTA *ex parte* filing, "1984 CAPITAL STOCK."

Provide a narrative explanation for each of the changes shown therein, indicating how the "error" was discovered, who discovered it, when it was discovered or who corrected it, and when the correction was provided to USTA and/or to Dr. Christensen.

**RESPONSE VI: (Part A)**

Dr. Christensen does not know how the errors were discovered, who discovered them, when they were discovered, or who corrected them. Corrected data were provided to Dr. Christensen in the November-December 1994 time frame.

Pacific Bell has been advised by USTA that to the extent that USTA has such information, USTA is not authorized to release it.

**REQUEST VI: (Part B)**

Provide work papers supporting each and all of the adjustments/corrections.

**RESPONSE VI: (Part B)**

Dr. Christensen does not have any workpapers supporting the adjustments/corrections.

Pacific Bell has been advised by USTA that to the extent that USTA has such workpapers, USTA is not authorized to release them.

**CCLTC FIRST SET OF INFORMATION REQUESTS  
IN PHASE I OF LPS-05-047**

**REQUEST VII: (Part A)**

Reference to pp. 10-16 of the February 3, 1995 USTA ~~or~~ page filing, showing the booked capital accounts for 1984-92. Provide a narrative explanation for each of the changes shown thereon, indicating how the "error" was discovered, who discovered it, when it was discovered, who corrected it, and when the correction was provided to USTA and/or to Dr. Christensen.

**RESPONSE VII: (Part A)**

Dr. Christensen does not know how the errors were discovered, who discovered them, when they were discovered, or who corrected them. Corrected data were provided to Dr. Christensen in the November-December time 1994 frame.

Pacific Bell has been advised by USTA that to the extent that USTA has such information, USTA is not authorized to release it.

**REQUEST VII: (Part B)**

Provide work papers supporting each and all of the adjustment/corrections.

**RESPONSE VII: (Part B)**

Dr. Christensen does not have any workpapers supporting the adjustment/corrections.

Pacific Bell has been advised by USTA that to the extent that USTA has such workpapers, USTA is not authorized to release them.

Sep. 5. 1995 4:58PM PACBELL LEGAL DEPT.

No. 5510 P. 16/18

**CCLTC FIRST SET OF INFORMATION REQUESTS  
IN PHASE I OF L95-05-047**

**REQUEST VIII:**

Reference to pp. 17-19 of the February 3, 1995 USTA at ~~state~~ filing showing "Corrected TPIs" for the LEC Composite, Bell Atlantic, and Southwestern Bell. Provide individual TPIs for all other LECs included in the "Composite" in the same format as used for Bell Atlantic and Southwestern Bell.

**RESPONSE VIII:**

Individual company Telephone First Instances are not contained in the database for Dr. Christensen's study. The database contains only aggregate LEC data. Pacific Bell's TPI is provided in response to Request I. Pacific Bell has been advised that any information that is within the scope of the request that is in the possession of either Dr. Christensen or USTA is subject to accreditation requirements and, therefore, cannot be provided.

**CCLTC FIRST SET OF INFORMATION REQUESTS  
IN PHASE I OF L95-03-047**

**REQUEST IX:**

Reference to pp. 17-19 of the February 3, 1995 USTA *ex parte* filing, showing "Corrected TPI's" for the LEC Composite, Bell Atlantic, and Southwestern Bell. Provide an explanation of the fact that, as corrected, Bell Atlantic's Central Office Equipment (COE) TPI - representing the prices it paid for COE - increased by 49% from the 1984 base year to 1992, while the COE TPI for Southwestern Bell and the LEC Composite decreased by 9.3% and 7.3%, respectively, over that same period. If the apparent Bell Atlantic anomaly cannot be explained, please recompute the LEC Composite COE TPI to exclude Bell Atlantic and correct the "1993 update" TPI accordingly.

**RESPONSE IX:**

Bell Atlantic was asked about the value of their COE TPI's and they verified the values of their COE TPI's as being an accurate reflection of prices the company paid for central office equipment. Furthermore, as noted above in the response to Question VII, individual company Telephone Plant Indices are not contained in the data base for Dr. Christensen's USTA TPI study. The data base contains only aggregate LEC data and, therefore, it is not possible to exclude the TPIs of one company from the analysis. Even if individual company data were contained in the data base for Dr. Christensen's USTA TPI study, Dr. Christensen is required by USTA to treat such data as confidential and proprietary and not to disclose it. Given these circumstances, recomputation, if deemed necessary, could be approximated by banking Bell Atlantic's TPIs out of the analysis. This would be accomplished by subtracting from the composite COE TPI, Bell Atlantic's TPI times the weight of Bell Atlantic's TPI in the composite. This difference would then be divided by the weight of the remaining LECs in the composite COE TPI to approximate the composite COE TPI without Bell Atlantic. If the Bell Atlantic COE TPIs were to be excluded, the overall results of the USTA TPI study would, in all likelihood, only change by a minimal amount.

**CCLTC FIRST SET OF INFORMATION REQUESTS  
IN PHASE I OF L95-05-047**

**REQUEST X:**

Reference to pp. 17-19 of the February 3, 1995 USTA exhibit filing, showing "Corrected TPIs" for the LEC Composite, Bell Atlantic, and Southwestern Bell. Although not as extreme as in the case of COE, most of Bell Atlantic's other TPIs appear to be increasing at a significantly faster rate than for the LEC Composite or for SWB. Provide an explanation of the fact that, as corrected, Bell Atlantic's capital input prices are rising so much faster than those of other LECs. If the apparent Bell Atlantic anomaly cannot be explained for one or more of the other TPIs, please recompute the LEC Composite TPIs to exclude Bell Atlantic and correct the "1993 update" TPI accordingly.

**RESPONSE X:**

Bell Atlantic was asked about the values of their other TPI's and they verified the values of their other TPI's as being an accurate reflection of the prices paid by the company for the acquisition of equipment in the various asset categories. Furthermore, as noted above in the response to Question VII, individual company Telephone First Indexes are not contained in the data base for Dr. Christensen's USTA TPI study. The data base contains only aggregate LEC data and, therefore, it is not possible to exclude the TPIs of one company from the analysis. Even if individual company data were contained in the data base for Dr. Christensen's USTA TPI study, Dr. Christensen is required by USTA to treat such data as confidential and proprietary and not to disclose it. Given these circumstances, recomputation, if deemed necessary, could be approximated by leaving Bell Atlantic's TPIs out of the analysis. For each of the other non-COE categories, this would be accomplished by subtracting from the composite TPI, Bell Atlantic's TPI times the weight of Bell Atlantic's TPI in the composite. This difference would then be divided by the weight of the remaining LECs in the composite TPI to approximate the composite TPI without Bell Atlantic. If the Bell Atlantic TPIs were to be excluded, the overall results of the USTA TPI study would, in all likelihood, only change by a minimal amount.



1 SAN FRANCISCO, CALIFORNIA, SEPTEMBER 27, 1995-9:05 A.M.

2 \* \* \* \* \*

3 ADMINISTRATIVE LAW JUDGE REED: On the record.

4 Mr. Sasser.

5 MR. SASSER: Thank you, your Honor.

6 Yesterday, there were a couple of transcript  
7 requests made, and we have responses available today.  
8 The first one was a transcript request from Mr. Stover  
9 for a Wall Street Journal article that had been  
10 referenced by Mr. Schmalensee.

11 I had provided that to counsel, and I have  
12 copies available for the other parties, and I will  
13 provide you with a copy as well.

14 ALJ REED: Thank you.

15 In addition, there was a transcript request  
16 made for some tables that Dr. Schmalensee had referred  
17 to, and I have a copy of those tables as well from the  
18 transcript request that was made.

19 ALJ REED: Thank you.

20 MR. SASSER: In addition, yesterday Dr. Christensen  
21 was asked to accept a number of figures subject to  
22 check. And, if he could, he'd just like to briefly  
23 speak to that.

24 MR. GOLABEK: I was just asking, those were  
25 Exhibits 3 and 4 respectively?

26 MR. SASSER: Counsel reserved -- for AT&T reserved  
27 the exhibit numbers. I'm not certain of the exhibit  
28 numbers.

PUBLIC UTILITIES COMMISSION, STATE OF CALIFORNIA  
SAN FRANCISCO, CALIFORNIA

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1 ALJ REED: Yes. Those were 3 and 4. Thank you.

2 MR. PHILLIP: Three being the article from the  
3 Wall Street Journal?

4 ALJ REED: Excuse me?

5 MR. PHILLIP: Three being the article from the Wall  
6 Street Journal?

7 ALJ REED: Yes, yes.

8 LAURITS R. CHRISTENSEN

9 resumed the stand and testified further as follows:

10 ALJ REED: Okay. Dr. Christensen has some  
11 corrections to make.

12 THE WITNESS: I was asked yesterday to accept  
13 subject to check that for the output growth figures in  
14 my Table 1 on page 10 of my report, which has been  
15 labeled Exhibit 6, I was asked to accept subject to  
16 check that the average rate of growth of output for 1985  
17 to 1988 was 3.4 percent per year. And when I checked  
18 that and did the computation myself, I came up with a  
19 different figure. I came up with 3.6 percent.

20 ALJ REED: Okay. Thank you.

21 MS. BURDICK: Because that was in response to my  
22 question, your Honor, I want to confirm after  
23 recalculating the numbers I used that Dr. Christensen  
24 was correct. And I appreciate the clarification on the  
25 record.

26 ALJ REED: Thank you, Ms. Burdick. You had  
27 finished with your questioning yesterday?

28 MS. BURDICK: Fortunately for everyone, yes.

PUBLIC UTILITIES COMMISSION, STATE OF CALIFORNIA  
SAN FRANCISCO, CALIFORNIA

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1 ALJ REED: Mr. Faber.

2 MR. FABER: Thank you, your Honor.

3 CROSS-EXAMINATION

4 BY MR. FABER:

5 Q Good morning Dr. Christensen?

6 A Good morning.

7 Q My name is Joe Faber, and I represent the  
8 California Committee for Large Telecommunications  
9 Consumers, and I have a few questions for you this  
10 morning.

11 Am I correct that you presented information to  
12 the FCC in Docket 94-1 regarding LEC telefactor  
13 productivity?

14 A Yes.

15 Q And on page 7 of your Exhibit No. 3 -- I'm  
16 sorry -- Exhibit No. 6, Attachment 1, you say that you  
17 recently performed a TFP study of the LEC industry for  
18 USTA; do you see that?

19 A Yes, I do.

20 Q Was that the study that you presented to the  
21 FCC?

22 A Yes.

23 Q And is the study that you referred to on  
24 page 7 the one that is attached as Appendix 1 to your  
25 testimony?

26 A There were two different studies that I  
27 submitted. The first was submitted in May of 1994,  
28 which is not what is shown here as Appendix 1.

PUBLIC UTILITIES COMMISSION, STATE OF CALIFORNIA  
SAN FRANCISCO, CALIFORNIA

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1           There were subsequent updates and revisions to  
2 the original study, and that revised study was submitted  
3 early in 1995 to the FCC. And that's what appears as  
4 Appendix 1 to my report.

5           Q   That is the document that's -- that we'll call  
6 the 1993 update?

7           A   Yes.

8           Q   And I actually have in front of me a copy of a  
9 transmittal to the FCC dated January the 20th from USTA  
10 stating, "Attached is a copy of this 1993 update."

11           Was that the transmittal that you referred to  
12 earlier in 1995?

13          A   It is.

14          Q   Now, the study bears your name and that of two  
15 others, Phillip Schoech?

16          A   Schoech.

17          Q   And Mark Meitzen. They are colleagues of  
18 yours at your firm?

19          A   Yes, they are.

20          Q   Did they work with you in preparing this  
21 study?

22          A   Yes.

23          Q   Are either of them in the room today?

24          A   Yes.

25          Q   Which of them are here?

26          A   Dr. Meitzen.

27          Q   What is Dr. Schoech's background, if you could  
28 tell us briefly?

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1           A    Sure. Dr. Schoech is a Ph.D. economist. He  
2   was my graduate student. He came to the University of  
3   Wisconsin in, I believe it was, 1973 when I was a  
4   professor of economics there.

5                He studied and did his doctoral dissertation  
6   under my supervision in the area of productivity  
7   measurement, and he worked for me at that time as well  
8   as a research assistant, and, subsequently, as an  
9   associate at my firm, Christensen Associates.

10          Q    And for Dr. Meitzen, can you briefly describe  
11   his background for us?

12          A    Yes. Dr. Meitzen is also a Ph.D. from the  
13   University of Wisconsin. He was not, however, my Ph.D.  
14   student.

15                Dr. Meitzen, after getting his Ph.D., served  
16   for some years as a professor of economics in I believe  
17   it was Eastern Michigan University. Subsequent to that,  
18   he spent some years at Southwestern Bell Telephone  
19   Company. And for the last five years he's been an  
20   associate of mine at Christensen Associates.

21          Q    Now, specifically referring to this 1993  
22   update, can you tell us whether you were directly  
23   involved in drafting it, or did one of your two  
24   associates draft it for you?

25          A    I was directly involved in drafting it.

26          Q    Now, that study, the 1993 update, is the basis  
27   of your recommendation today that the Commission  
28   conclude that there's a TFP differential of 2 percent;

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1 is that right?

2 A Well, as I said yesterday, that's a major part  
3 of my basis, yes, but not the sole basis.

4 Q The -- let me back up for a second.

5 Have you had an opportunity to read all of the  
6 testimony that's been submitted in this case before the  
7 Public Utilities Commission?

8 A No.

9 Q Have you read all of Dr. Selwyn's testimony?

10 A I believe so. I've read his initial testimony  
11 and his reply testimony.

12 Q All right. And Dr. Schmalensee's, did you  
13 read his original and his reply testimony as well?

14 A No.

15 Q How about Dr. Duncan, did you read his  
16 testimony?

17 A Yes, I did.

18 Q Both the original and the reply?

19 A Yes.

20 Q Now, this 1993 update that we're talking  
21 about, I'm going to ask you a number of questions about  
22 it.

23 First off, though, can you explain how it was  
24 that the 1993 -- I'm sorry -- that the January 20th,  
25 1995 submission changed what had been submitted in  
26 May 1994?

27 A Yes, there were changes of two natures. And I  
28 might just say the end result, before I go into the

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1 details, in the original TFP study, my finding was that  
2 for the differential between LEC total factor  
3 productivity and U.S. economy total factor productivity  
4 over the 1984 to 1992 period -- which is usually  
5 referred to as the post-divestiture period -- I found a  
6 TFP differential of 1.7 percent. ]

7 And in the update, that number was revised  
8 upward for 2.1 percent per year.

9 And the revision took -- reflected two  
10 things. Primarily, the first was that subsequent to my  
11 filing the study with the FCC in May of 1994, the U.S.  
12 Bureau of Labor Statistics revised their TFP growth  
13 figure for the U.S. economy. So when we then looked at  
14 the period, post-divestiture period, rather than  
15 being .9 percent per year, that figure became .3 percent  
16 per year -- a very substantial revision.

17 There was also a revision update in the  
18 figures for the LEC industry. In the study that I filed  
19 in May of 1994, the figure for LEC total factor  
20 productivity growth over 1984 to 1992 was 2.6 percent  
21 per year. With the revisions and the update through  
22 1993, that figure was revised downward slightly from 2.6  
23 percent per year to 2.4 percent per year.

24 In the original study, the differential was  
25 2.6 percent for the LECs minus .9 percent for the U.S.  
26 economy, 2.6 minus .9 is 1.7 percent per year. Each of  
27 those components was revised. The LEC number was  
28 revised downward by 2/10ths. For the U.S. economy, the

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1 number was revised downward by 6/10ths of a percent and  
2 the overall result was the estimated TFP differential  
3 went up from 1.7 percent to 2.1 percent per year.

4 And that was the basis of my filing to the FCC  
5 in January of 1995, and that updated study is the basis  
6 for -- one of bases for my testimony here.

7 Q Okay. The modification of the U.S. economy  
8 number from .9 to .3, that was done by BLS; right?

9 A That's correct.

10 Q You weren't involved in the calculation of  
11 that number?

12 A I was not.

13 Q Would the number of .3 provided by the BLS  
14 have applied to your original study even if you had not  
15 done an update on the LEC numbers?

16 A I don't remember whether it would be  
17 exactly .3, but it would be approximately by .3.

18 Q Would you -- when you provided the 1993 update  
19 to the FCC in January of this year, there were results  
20 in that revised document that were based on a number of  
21 data changes concerning each or some of the individual  
22 LECs that had been studied; is that right?

23 A That's correct.

24 MR. FABER: I want to provide you with two  
25 documents because they are going to require that I ask  
26 you some questions out of both.

27 First is a set of data requests and responses  
28 that we -- well, the request we submitted to Pacific



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1 Bell and the responses came from Pacific Bell. And  
2 second is a document dated February 3rd, 1995  
3 transmitting certain information to the FCC.

4 Can we go off the record for a moment, your  
5 Honor?

6 ALJ REED: Off the record.

7 (Off the record)

8 ALJ REED: On the record.

9 MR. FABER: Your Honor, I have distributed copies  
10 of two documents. I'd like to have the first marked  
11 CCLT First Set of Information Requests marked as the  
12 next exhibit in order.

13 ALJ REED: It will be marked for identification as  
14 Exhibit No. 8.

15 (Exhibit No. 8 was marked for  
16 identification.)

17 MR. FABER: I'd like to have the document which  
18 comprises a letter to the FCC from the USTA dated  
19 February 3rd, 1995 with attachments marked as the next  
20 exhibit please.

21 ALJ REED: It will be marked for identification as  
22 Exhibit No. 9.

23 (Exhibit No. 9 was marked for  
24 identification.)

25 MR. FABER: Can we go off the record one more  
26 time?

27 ALJ REED: Off the record.

28 (Off the record)